

REMARKS

Reconsideration of this patent application is respectfully requested in view of the foregoing amendments, and the following remarks.

The amendments to this patent application are as follows.

The Specification is being amended on pages 1, 3, 7, and 8 in order to recite the Section Headings which are required by U.S. practice. Withdrawal of this objection to the Specification is respectfully requested.

The Patent Examiner has rejected the claims over prior art and has argued that claims 2-5 are product-by-process claims and thereby have not been given any patentable weight. In answer to this rejection, the following Amendment has been provided.

Specifically, dependent claim 2 has been rewritten as an independent claim directed to the method for producing a one piece fuse insert. Also method claims 2, 3, and 4 are being revised to recite method terminology in compliance with U.S. practice. Thus, it is respectfully submitted that claims 2, 3, and 4 are now clearly directed to the method and are not product-by-process claims, as alleged by the Patent Examiner.

Newly added dependent claims 6 and 7 recite a protective coating that is maintained on the fuse insert after the cross-section of the connection piece is reduced. Support for this is found in the present Specification on Page 4 in the bottom 10 lines thereof and on Page 3 in lines 10 to 16 of the present Specification.

Claims 1-5 were rejected by the Patent Examiner under 35 U.S.C. 102(b) as being anticipated by *Aryamane U.S. Patent No. 4,023,265*, or alternatively, rejected under 35 U.S.C. 102 by *Oh et al. U.S. Patent No. 6,642,834*, or alternatively, rejected under 35 U.S.C. 102 by what the Office Action refers to as Applicants' admitted prior art (AAPA) for the reasons set forth on pages 2-4 of the Office Action.

These rejections are respectfully traversed.

The present invention relates to a one-piece fuse insert consisting of a flat part punched from sheet metal, particularly zinc sheet metal, particularly a flat plug, the contacts of which are connected with one another by means of a connection piece that forms a fusible conductor. The present invention also relates to a method for producing a one-piece fuse insert, in which a strip of sheet metal, particularly zinc sheet metal, is

transported lengthwise through machining tools, with which the contours of the fuse insert are worked out of the strip, which fuse insert consists of contacts and a connection piece that connects the contacts. Furthermore, the present invention also relates to a device for implementing the method.

The sheet metal from which the fuse inserts are produced consequently consists of a material that is suitable for use as a fusible conductor in fuses. It is known to produce one-piece fuse inserts from zinc sheet metal. Often, the zinc sheet metal is provided with coatings that protect against corrosion, or also with coatings that improve an electrical connection of the fuse inserts with the bushings of the securing holder. Protective tin or silver coatings are used.

In the production of one-piece fuse inserts, the method of procedure is therefore such that in order to achieve a certain rated current strength, the sheet metal being used is reduced to a predetermined value in its thickness, in the continuous surface region from which the connection piece is supposed to be made, by means of machining that removes material, e.g. milling, in such a manner that connection pieces can be cut from the sheet metal region that remains between the contacts of the flat plug, which pieces guarantee the desired value of the rated current strength of the fuse inserts being produced, in each instance.

However, the machining that removes material, milling, has the disadvantage that the coating that protects against corrosion is worn off the sheet metal. It is also disadvantageous that the particular work process of milling must be carried out before the strip of sheet metal passes through the machining tool, in order to form the fuse inserts.

The present invention achieves the object of being able to make available a one-piece fuse insert in which the advantageous corrosion protection in the form of tin or silver coatings is maintained, although the cross-section of the connection piece to achieve predetermined rated current strengths is reduced as compared with the thickness of the sheet metal used for production.

The one-piece fuse insert of the present invention consists of a flat part punched from sheet metal, particularly zinc sheet metal, particularly a flat plug, the plug contacts of which are connected with one another by means of a connection piece that forms a fusible conductor and is left behind when the contours are formed. However, pressing it flat has the advantage, as compared with the known milling, that the cross-section of the connection piece becomes less without removing protective coatings made of tin or silver. In the case of the fuse insert according to the present invention, the connection piece that

forms the fusible conductor still has the protective coating even after it has been pressed flat for the purpose of achieving a certain rated current strength.

The one-piece fuse insert is produced, according to the invention, in such a manner that a strip of sheet metal, particularly zinc sheet metal, is transported lengthwise through machining tools, preferably step by step, with which tools the contours of the fuse insert are worked out of the strip, which fuse insert consists of contacts and a connection piece that remains and connects the contacts. This connection piece is stamped and made thin, according to the invention, to a predetermined thickness. Machining that removes material is eliminated, so that the corrosion-protecting coatings of the strip of sheet metal are retained, specifically in the region of the connection piece.

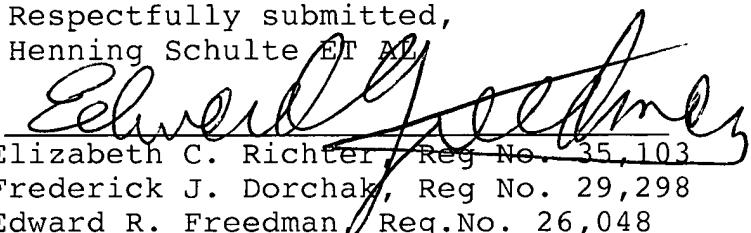
In the *Aryamane* patent in column 5 in lines 1 to 10, forming of the tapered portion occurs by coining. In the *Oh* patent in column 2 in lines 6 to 8, thinning occurs by skiving or coining. Thus, the difference over the prior art consists in that in the fuse insert of the invention, there takes place a stamping, not a milling or cutting. In the prior art, the fuse segment with the reduced thickness is manufactured in two steps, namely by punching or stamping, and by subsequent milling. In the process

of the invention, punching and milling that occur on one and the same machine is possible.

Hence, the prior art references would destroy the protective coating which is maintained by the present invention.

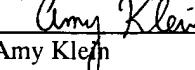
For all these reasons, none of the prior art references provide an identical disclosure of the claimed invention. Hence, the present invention is not anticipated under 35 U.S.C. 102, but is patentable under 35 U.S.C. 103 over all the prior art applied by the Patent Examiner. Withdrawal of this ground of rejection is respectfully requested. A prompt notification of allowability is respectfully requested.

Respectfully submitted,
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I hereby certify that this correspondence is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to: Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on October 15, 2008.


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